Ucore Rare Metals is building its rare earths Field of Dreams with RapidSX

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To misquote the famous line in the 1989 movie '*Field of Dreams*', "if you build it, they will come" (the actual line from the movie is he will come – referring either to Kevin Costner's character's father or shoeless Joe Jackson or perhaps both). Making a giant leap from that to the world we find ourselves in today, where 80% of the worlds rare earth resources are controlled by China, if you build it, or at least can process the raw materials into rare earth oxides (REOs), then arguably everyone will come. OK, maybe that was a bad segue but you're just going to have to live with it. The point is, there are billions of dollars being invested over the next couple of years on EV battery manufacturing facilities in North America and the U.S. has recently implemented legislation (the Inflation Reduction Act), which requires that 40% of battery components be sourced from factories in the U.S. or its free trade agreement partners, and that Chinese components and minerals be phased out beginning in 2024. On-shoring is the name of the game as we transition to a lower carbon future.

There are numerous rare earth explorers pursuing processing capabilities but perhaps no one is closer to commissioning than Ucore Rare Metals Inc. (TSXV: UCU | OTCQX: UURAF). Ucore is focused on rare- and critical-metals resources, extraction, beneficiation, and separation technologies with the potential for production, growth, and scalability. Ucore has an effective 100% ownership stake in the Bokan-Dotson Ridge Rare Earth Element Project in Southeast Alaska. Ucore's vision includes

disrupting the People's Republic of China's control of the U.S. rare earths supply chain through the near-term development of heavy and light rare-earth processing facilities – including the Alaska Strategic Metals Complex in Southeast Alaska. And to that end Innovation Metals Corp., a wholly owned Ucore subsidiary, has developed the RapidSX separation technology resulting in the production of commercial-grade, separated rare earth oxides at the pilot scale.

Sounds promising but what exactly is RapidSX? The process combines the time-proven chemistry of conventional solvent extraction (SX) with a new column-based platform, which significantly reduces time to completion and plant footprint, as well as potentially lowering capital and operating costs. SX is the international rare earth industry's standard commercial separation technology and is currently used by 100% of all rare earth producers worldwide for bulk commercial separation of both heavy and light rare earths. Utilizing similar chemistry to conventional SX, RapidSX is not a new technology but represents a significant improvement on the well-established, well-understood, proven conventional SX separation technology preferred by rare earth producers. As an investor, I prefer disruption of existing technology versus reinventing the wheel as it is typically more capital efficient and quicker to market, unless of course, it's cold fusion type of disruption, in which case I'm all ears.

As for the progress of RapidSX, Ucore announced in mid-July that it had upscaled its rare earth Demonstration Plant capabilities and streamlined the RapidSX commercial deployment plan. In early 2022 Ucore received very positive results from the independent RapidSX technology evaluation, including the conclusion that a RapidSX production plant can potentially have a 2/3rds smaller footprint than a conventional SX facility with the same throughput. The team then received buy-in from all stakeholders

to expand the design and construction of the Demo Plant. Ucore's enhanced Demo Plant will be able to process: tens of tonnes of mixed rare earth concentrate on a per annum basis; many feedstock sources, including planned light and heavy rare earth element feedstocks for the Strategic Metals Complexes; and all RapidSX splits required to produce individual praseodymium, neodymium, terbium, and dysprosium. Ucore has planned product qualification trials in Q4-2022 for prospective North American metal/alloy makers and original equipment manufacturers (OEMs).

All this is only one aspect of Ucore's business, they are also a rare earth explorer with the advanced Bokan-Dotson Ridge rare earth deposit. Highlights at Bokan include a NI 43-101 Preliminary Economic Assessment, with a resource estimate that remains open down-dip and on-strike with further drilling planned. The project can be "near shovel ready" for construction in less than 30 months after receipt of the next stage of development funding. And the Company boasts that Bokan is the highest grade NI 43-101 HREE resource in the U.S. But we'll save digging further into the details on Bokan for another day.

Bottom line, Ucore is very close to churning out rare earth oxide material at its Demonstration Plant which could lead to supply offtake agreements with EV manufacturers and/or other downstream customers. This could be huge for Ucore in light of the fact that on-shoring is going to be a high priority for the foreseeable future. With a market cap of C$34 million, there could be a bright future for Ucore if all the pieces fall into place.